Copper tripeptide-1

INCI name:	**Copper tripeptide-1**
Peptide Sequence:	GHK-Cu
Molecular Formula:	$C_{28}H_{46}N_{12}O_8Cu$
Molecular weight:	742.3
Trade name:	Copper tripeptide-1
CAS No.:	89030-95-5
Application:	Cosmetics - skin renewal, hair growth, wound healing
Packaging:	bottle
Filling Quantity:	1 g / bottle 10 g / bottle 100 g / bottle 1000 g / bottle special packaging upon request
Shelf life:	up to 2 years, not opend
Storage conditions:	dry and cool avoid direct sunlight and heat

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Product Spezification

Copper tripeptide-1

Manufacturing date: 11.12.2017 Expiry date: 10.12.2019

Parameter	Spezification	Result
Appearance	blue to purple powder	conforms
Identity	401.91 ±1	402.1
Solution	> 100 mg/ml (H_2O)	conforms
Amino acids composition	± 10 % of theoretical	conforms
Peptide purity (HPLC)	≥ 95.0 % by area integration	99.08 %
Water content (K. Fischer)	≤ 8.0 %	2.73 %
Acetate content	≤ 15.0 %	10.6 %
Copper content	8 ~ 12 %	10.72 %
PH (1% water solution)	6.0 - 8.0	6.56

Characteristics:

Copper is an important trace element that has been found to be important in wound healing and enzymatic processes. Lysyloxidase is an important enzyme in collagen and elastin production and it is dependent upon the action of copper. Tyrosinase and cytochrome c oxidase require copper as well. The detrimental effects of free radicals on the skin have been elucidated in basic science research info skin photo-aging. Superoxide dismutase acts as an important antioxidant and requires copper as a cofactor. The peptide GHK spontaneously complexes with copper and facilitates the uptake of copper by cells. This peptide sequence is found in proteins of the extracellular matrix such as the α-chain of collagen, and it is believed to be released during wounding and inflammation. A feedback stimulation of collagen repair has also been proposed for this peptide, but the main benefit to photo-agend skin is believed to be the enhanced delivery of copper.

Use level: 0.05—0.5 %

Cosmetic benefits:

1. Regenerate new collagen and elastin which imporve skin firmness and elasticity
2. Increase the production of water-holding glycosaminoglycans which are true moisturization
3. Improve the skin`s blood vessel microcirculation, help hair growth
4. Produce biochemical energy from nutrients in the body`s blood supply
5. Increase the natural defense mechanism against oxidative damage, and re-pair damage to the protective skin barrier. As the skin is rebuilt and scars removed, the elastic properties of skin pull it into a smooth surface